

Appl. No. 10/688,103

Attorney Docket No. 10541-1908

I. Listing of Claims

1. (Currently Amended): A method for manufacturing a shaft-hub connection comprising the steps of:

chucking in a first working piece spindle a brake disk having a hub and an aperture therein;

chucking in a second working piece spindle a drive shaft having a bell and a catching portion adapted to extend into the aperture;

green machining via turning the brake disk while the brake disk is chucked in the first working spindle;

green machining via turning the drive shaft while the drive shaft is chucked in the first working spindle;

hardening the drive shaft while the drive shaft is chucked in the first working spindle;

final finishing via turning the brake disk while the brake disk is chucked in the first working spindle;

final finishing via turning the drive shaft while the drive shaft is chucked in the first working spindle;

whereby final dimensions of the brake disk and drive shaft are respectively obtained in a single chucking action.

2. (Original): The method according to claim 1, characterized in that said green machining via turning of the brake disk includes machining of a brake body, including brake surfaces of the brake disk.

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3. (Original): The method according to claim 1, characterized in that said green machining via turning of the drive shaft includes machining of the bell, a polygonal contour in a catching portion, bearing seats, and an end portion of the drive shaft including the turning of a thread onto the end portion.

4. (Original): The method according to claim 1 wherein said step of final finishing via turning of the brake disk includes the creation of the final dimensions of a polygonal inner contour of the aperture and bearing shoulders.

5. (Original): The method according to claim 1 wherein said step of final finishing via turning of the drive shaft includes the creation of the final dimensions of a polygonal outer contour of the catching portion and of bearing shoulders.

6. (Original): The method according to claim 1 comprising the steps of securing a first lathe tool in a first tool spindle, rotating the drive shaft about a rotational axis (X-X), and rotating the first lathe tool about a second rotational axis (Y-Y), whereby the rotational axis X-X is offset relative to the rotational axis Y-Y by a predetermined amount to generate a polygonal contour on the catching portion.

6. (Canceled): ~~The method according to claim 6 comprising the step of using a second lathe tool to turn generally cylindrical outer contours of the drive shaft in the same chucking.~~

7. (Original): The method according to claim 1 comprising the steps of securing a first lathe tool in a first tool spindle, rotating the brake disk about a

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rotational axis (X-X), and rotating the first lathe tool about a second rotational axis (Y-Y), whereby the rotational axis X-X is offset relative to the rotational axis Y-Y by a predetermined amount to generate a polygonal contour in the aperture.

8. (Original): The method according to claim 7 comprising the step of using an additional lathe tool to turn generally cylindrical contours of the brake disk in the same chucking.

9. (Original): The method according to claim 7 further comprising machining the braking faces of said brake disk with a second lathe tool and creating the shoulders with a third tool, all in the same chucking.

10. (Original): The method according to claim 1 further comprising the step of providing finished products with a rated/actual value deviation amounting to less than 10 micrometers.

11. (Original): The method according to claim 1 further comprising the step of joining the brake disk and drive shaft together wherein the finished shaft-hub connection has a wobble smaller than 25 micrometers.

12. (New): The method according to claim 6 comprising the step of using a second lathe tool to turn generally cylindrical outer contours of the drive shaft in the same chucking.

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